Volunteer Lake Assessment Program Individual Lake Reports

PERKINS POND, SUNAPEE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	704	**Max. Depth (m):**	3	**Flushing Rate (yr^{1})**	1.3
Surface Area (Ac.):	157	**Mean Depth (m):**	1.4	**P Retention Coef:**	0.83
Shore Length (m):	3,900	**Volume (m^3):**	877,000	**Elevation (ft):**	1082

TROPHIC CLASSIFICATION

Year	Trophic class
1986	OLIGOTROPHIC
2003	MESOTROPHIC

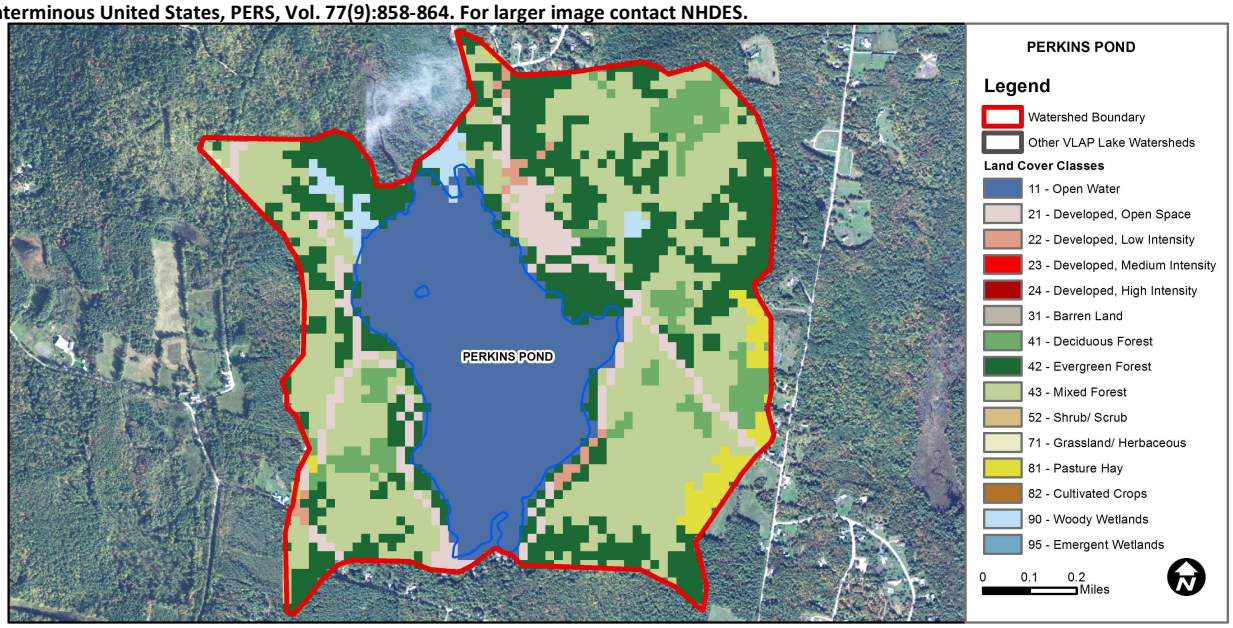
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Cautionary	One exceedance of single sample criteria but not enough data to calcuate geometric mean. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	24.8	Barren Land	0	Grassland/Herbaceous	0.1
Developed-Open Space	6.47	Deciduous Forest	5.65	Pasture Hay	2.53
Developed-Low Intensity	0.92	Evergreen Forest	24.64	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	33.43	Woody Wetlands	1.71
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
PERKINS POND, SUNAPEE, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were elevated in August indicating a potential algal bloom, however average levels decreased from 2011. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels are slightly elevated and are greater than the NH lake median. Outlet conductivity increased as the summer progressed likely due to low water levels.
- **E. COLI:** E. coli levels were non measurable and well below state standards.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels remained stable throughout the summer and were approximately equal to the NH lake median. Historical trend analysis indicates phosphorus levels tend to fluctuate from year to year.
- **TRANSPARENCY:** Transparency levels were much lower in August due to the elevated algal growth. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- **TURBIDITY:** Epilimnetic turbidity was slightly elevated in August due to the elevated algal growth. Outlet turbidity was elevated in June and monitors indicated rainfall while sampling and stormwater runoff may have contributed to the elevated turbidity.
- **PH:** Historically, pH levels have fluctuated below critical levels.
- **RECOMMENDED ACTIONS:** Stormwater runoff may have contributed to the elevated Outlet turbidity measured in June. Identify potential areas of erosion around the Outlet and implement best management practices to reduce sedimentation if possible. Keep up the great work!

Table 1. 2012 Average Water Quality Data for PERKINS POND

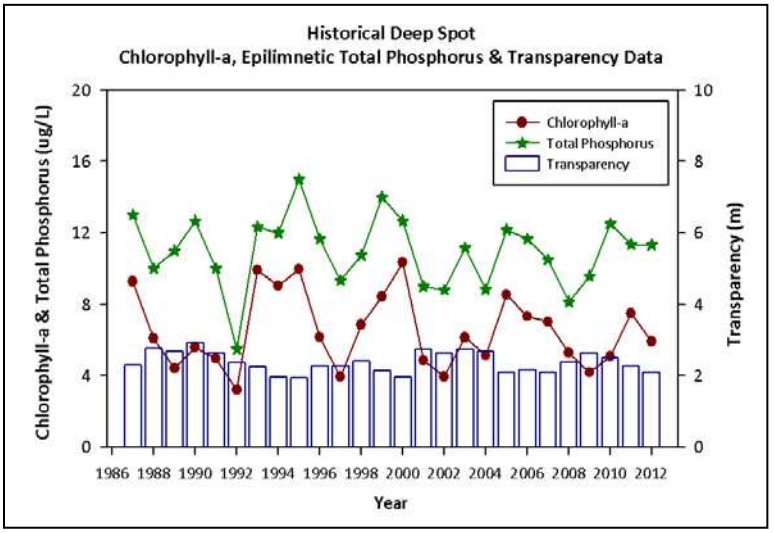
Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	8.1	5.9	56.2		11	2.10	2.10	1.56	6.70
In Lake				0					
Inlet			60.4		13			1.28	6.42
Outlet			78.2		17			1.94	6.35

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



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